SEQUENCE LISTING

<110> WATZELE, MANFRED
BUCHBERGER, BERND
PAULUS, MICHAEL

<120> OPTIMIZED PROTEIN SYNTHESIS

<130> 6398-78031

<140> 10/538,405
<141> 2005-06-09

<150> PCT/EP03/013964
<151> 2003-12-09

<150> DE 10257479.0
<151> 2002-12-09

<160> 73

<170> PatentIn Ver. 3.3

<210> 1
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<220>
<223> Description of Artificial Sequence: Synthetic primer C

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gaaattaata cgactcacta tagggagacc acaacggttt ccctctagaa ataattttgt 60
ttaactttaa gaaggagata tacc 84

<210> 2
<211> 71
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer D

<400> 2
caaaaaaccc ctcaagaccc gtttagaggc cccaaggggg gccgccagtg tgctgaattc 60
gcctttttatt a 71

<210> 3
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 3
aggagatata ccatgactag caaaggagaa 30

<210> 4
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A stem length 4 bp

<400> 4
aggagatata ccatgactaa ttttagtact agcaaaggag aa 42

<210> 5
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A stem length 5 bp

<400> 5
aggagatata ccatgactgt ttatacagta actagcaaag gagaa 45

<210> 6
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A stem length 6 bp

<400> 6
aggagatata ccatgactgg tcaattacca gtaactagca aaggagaa 48

<210> 7
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A stem length 7 bp

<400> 7
aggagatata ccatgactgc tttacatcaa gcagtaacta gcaaaggaga a 51

<210> 8
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A stem length 8 bp

<400> 8
aggagatata ccatgactgc acgtgatcgt gcagtaacta gcaaaggaga a 51

<210> 9
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer B

<400> 9
attcgccttt tattaatgat gatgatgatg 30

<210> 10
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 10
aggagatata ccatgactag cactgcacgt gcatcgtgca gtgtaaaagg agaagaactt 60

<210> 11
<211> 63
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 11
aggagatata ccatgactag caaaactgca cgtgcatcgt gcagtgtagg agaagaactt 60
ttc 63

<210> 12
<211> 66
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 12
aggagatata ccatgactag caaaggaact gcacgtgcat cgtgcagtgt agaagaactt 60
ttcact 66

<210> 13
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 13
aggagatata ccatgactag caaaggagaa actgcacgtg catcgtgcag tgtagaactt 60
ttcactgga 69

<210> 14
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 14
aggagatata ccatgactag caaaggagaa gaaactgcac gtgcatcgtg cagtgtactt 60
ttcactggag tt 72

<210> 15
<211> 75
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 15
aggagatata ccatgactag caaaggagaa gaacttactg cacgtgcatc gtgcagtgta 60
ttcactggag ttgtc 75

<210> 16
<211> 71
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer D

<400> 16
caaaaaaccc ctcaagaccc gtttagaggc cccaaggggt tgggagtaga atgttaagga 60
ttagtttatt a 71

<210> 17
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 17
aggagatata ccatgaaata tacatattct ctgcacgtga tcgtgcaggc taacaccgcg 60

<210> 18
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 18
aggagatata ccatgaaaac atattattct ctgcacgtga tcgtgcaggc taacaccgcg 60

<210> 19
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 19
aggagatata ccatgaaata ttcttataca ctgcacgtga tcgtgcaggc taacaccgcg 60

<210> 20
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer A

<400> 20
aggagatata ccatgaaata ttattctaca ctgcacgtga tcgtgcaggc taacaccgcg 60

<210> 21
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer A

<400> 21
aggagatata ccatgaaata tacatattca ctgcacgtga tcgtgcaggc taacaccgcg 60

<210> 22
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer A

<400> 22
aggagatata ccatgaaaac atattattca ctgcacgtga tcgtgcaggc taacaccgcg 60

<210> 23
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer A

<400> 23
aggagatata ccatgaaata ttcatataca ctgcacgtga tcgtgcaggc taacaccgcg 60

<210> 24
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer A

<400> 24
aggagatata ccatgaaata ttattcaaca ctgcacgtga tcgtgcaggc taacaccgcg 60

<210> 25
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer A

<400> 25
aggagatata ccatgcatca tcatcatcat ctgcacgtga tcgtgcaggc taacaccgcg 60

<210> 26
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer wild type

<400> 26
aggagatata ccatggctaa caccgcg 27

<210> 27
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer B

<400> 27
aggattagtt tattaatgat gatgatgatg atggcgccgg gtgcgcga 48

<210> 28
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer A

<400> 28
aggagatata ccatgaaata tacatattct ctgcacgtga tcgtgcaggg tgccccgacg 60

<210> 29
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer A

<400> 29
aggagatata ccatgaaaac atattattct ctgcacgtga tcgtgcaggg tgccccgacg 60

<210> 30
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer A

<400> 30
aggagatata ccatgaaata ttcttataca ctgcacgtga tcgtgcaggg tgccccgacg 60

<210> 31
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer A

<400> 31
aggagatata ccatgaaata ttattctaca ctgcacgtga tcgtgcaggg tgccccgacg 60

<210> 32
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer A

<400> 32
aggagatata ccatgaaata tacatattca ctgcacgtga tcgtgcaggg tgccccgacg 60

<210> 33
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer A

<400> 33
aggagatata ccatgaaaac atattattca ctgcacgtga tcgtgcaggg tgccccgacg 60

<210> 34
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 34
aggagatata ccatgaaata ttcatataca ctgcacgtga tcgtgcaggg tgccccgacg 60

<210> 35
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 35
aggagatata ccatgaaata ttattcaaca ctgcacgtga tcgtgcaggg tgccccgacg 60

<210> 36
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A

<400> 36
aggagatata ccatgcatca tcatcatcat ctgcacgtga tcgtgcaggg tgccccgacg 60

<210> 37
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A wild type

<400> 37
aggagatata ccatgggtgc cccgacg 27

<210> 38
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer B

<400> 38
aggattagtt tattaatgat gatgatgatg atgatccatg gcagccagc 49

<210> 39
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 39
aggagatata ccatgaaata tacatattct ctgcacgtga tcgtgcagga gttggggccc 60

<210> 40
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 40
aggagatata ccatgaaaac atattattct ctgcacgtga tcgtgcagga gttggggccc 60

<210> 41
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 41
aggagatata ccatgaaata ttcttataca ctgcacgtga tcgtgcagga gttggggccc 60

<210> 42
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 42
aggagatata ccatgaaata ttattctaca ctgcacgtga tcgtgcagga gttggggccc 60

<210> 43
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 43
aggagatata ccatgaaata tacatattca ctgcacgtga tcgtgcagga gttggggccc 60

<210> 44
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 44
aggagatata ccatgaaaac atattattca ctgcacgtga tcgtgcagga gttggggccc 60

<210> 45
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 45
aggagatata ccatgaaata ttcatataca ctgcacgtga tcgtgcagga gttggggccc 60

<210> 46
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 46
aggagatata ccatgaaata ttattcaaca ctgcacgtga tcgtgcagga gttggggccc 60

<210> 47
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 47
aggagatata ccatgcatca tcatcatcat ctgcacgtga tcgtgcagga gttggggccc 60

<210> 48
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer A wild type

<400> 48
aggagatata ccatggagtt ggggccc 27

<210> 49
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer B

<400> 49
aggattagtt tattattaat gatgatgatg atgatgagaa ccccc 45

<210> 50
<211> 431
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic expression construct for mutant 1

<400> 50
gaaattaata cgactcacta tagggagacc acaacggttt ccctctagaa ataattttgt 60
ttaactttaa gaaggagata taccatgaaa tatacatatt ctctgcacgt gatcgtgcag 120
gctaacaccg cgccgggacc cacggtggcc aacaagcggg acgaaaaaca ccgtcacgtc 180
gttaacgtcg ttttggagct gccgaccgag atatcagagg ccacccaccc ggtgttggcc 240
accatgctga gcaagtacac gcgcatgtcc agcctgttta atgacaagtg cgcctttaag 300
ctggacctgt tgcgcatggt agccgtgtcg cgcacccggc gccatcatca tcatcatcat 360
taataaacta atccttaaca ttctactccc aacccccttgg ggcctctaaa cgggtcttga 420

ggggtttttt g 431

<210> 51
<211> 398
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
expression construct for wild type

<400> 51
gaaattaata cgactcacta tagggagacc acaacggttt ccctctagaa ataatttgt 60
ttaactttaa gaaggagata taccatggct aacaccgcgc cgggacccac ggtggccaac 120
aagcgggacg aaaaacaccg tcacgtcgtt aacgtcgttt tggagctgcc gaccgagata 180
tcagaggcca cccacccggt gttggccacc atgctgagca agtacacgcg catgtccagc 240
ctgtttaatg acaagtgcgc ctttaagctg gacctgttgc gcatggtagc cgtgtcgcgc 300
acccggcgcc atcatcatca tcatcattaa taaactaatc cttaacattc tactcccaac 360
cccttggggc ctctaaacgg gtcttgaggg gttttttg 398

<210> 52
<211> 632
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
expression construct mutant 1

<400> 52
gaaattaata cgactcacta tagggagacc acaacggttt ccctctagaa ataatttgt 60
ttaactttaa gaaggagata taccatgaaa tatacatatt ctctgcacgt gatcgtgcag 120
ggtgccccga cgttgccccc tgcctggcag ccctttctca aggaccaccg catctctaca 180
ttcaagaact ggcccttctt ggagggctgc gcctgcaccc cggagcggat ggccgaggct 240
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tccggttgcg ctttcctttc tgtcaagaag cagtttgaag aattaaccct tggtgaattt 420
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aaagaatttg aggaaactgc gaagaaagtg cgccgtgcca tcgagcagct ggctgccatg 540
gatcatcatc atcatcatca ttaataaact aatccttaac attctactcc caacccctg 600
gggcctctaa acgggtcttg aggggttttt tg 632

<210> 53
<211> 599
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
expression construct wild type

<400> 53
gaaattaata cgactcacta tagggagacc acaacggttt ccctctagaa ataatttgt 60
ttaactttaa gaaggagata taccatgggt gccccgacgt tgccccctgc ctggcagccc 120
tttctcaagg accaccgcat ctctacattc aagaactggc ccttcttgga gggctgcgcc 180

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gacttggccc agtgtttctt ctgcttcaag gagctggaag gctgggagcc agatgacgac 300
cccatagagg aacataaaaa gcattcgtcc ggttgcgctt tcctttctgt caagaagcag 360
tttgaagaat taacccttgg tgaatttttg aaactggaca gagaaagagc caagaacaaa 420
attgcaaagg aaaccaacaa taagaagaaa gaatttgagg aaactgcgaa gaaagtgcgc 480
cgtgccatcg agcagctggc tgccatggat catcatcatc atcatcatta ataaactaat 540
ccttaacatt ctactcccaa ccccttgggg cctctaaacg ggtcttgagg ggttttttg 599

<210> 54
<211> 1400
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
expression construct mutant 1

<400> 54
gaaattaata cgactcacta tagggagacc acaacggttt ccctctagaa ataattttgt 60
ttaactttaa gaaggagata taccatgaaa tatacatatt ctctgcacgt gatcgtgcag 120
gagttggggc ccctagaagg tggctacctg gagcttctta acagcgatgc tgaccccctg 180
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tcagaacccg acacagacac catcaactgc gaccagttca gcaggctgtt gtgtgacatg 300
gaaggtgatg aagagaccag ggaggcttat gccaatatcg cggaactgga ccagtatgtc 360
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gggtcttgag gggttttttg 1400

<210> 55
<211> 1367
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
expression construct wild type

<400> 55
gaaattaata cgactcacta tagggagacc acaacggttt ccctctagaa ataattttgt 60
ttaactttaa gaaggagata taccatggag ttggggcccc tagaaggtgg ctacctggag 120
cttcttaaca gcgatgctga ccccctgtgc ctctaccact tctatgacca gatggacctg 180

gctggagaag aagagattga gctctactca gaacccgaca cagacaccat caactgcgac 240
cagttcagca ggctgttgtg tgacatggaa ggtgatgaag agaccaggga ggcttatgcc 300
aatatcgcgg aactggacca gtatgtcttc caggactccc agctggaggg cctgagcaag 360
gacattttca agcacatagg accagatgaa gtgatcggtg agagtatgga gatgccagca 420
gaagttgggc agaaaagtca gaaaagaccc ttcccagagg agcttccggc agacctgaag 480
cactggaagc cagctgagcc ccccactgtg gtgactggca gtctcctagt gggaccagtg 540
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ctgcccagca tgcctgaacc tgccctgacc tcccgagcaa acatgacaga gcacaagacg 960
tcccccaccc aatgcccggc agctggagag gtctccaaca agcttccaaa atggcctgag 1020
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actcccaacc ccttggggcc tctaaacggg tcttgagggg ttttttg 1367

<210> 56
<211> 938
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
expression construct

<400> 56
gaaattaata cgactcacta tagggagacc acaacggttt ccctctagaa ataattttgt 60
ttaactttaa gaaggagata taccatgaaa tatacatatt ctctgcacgt gatcgtgcag 120
actagcaaag gagaagaact tttcactgga gttgtcccaa ttcttgttga attagatggt 180
gatgttaatg ggcacaaatt ttctgtcagt ggagagggtg aaggtgatgc tacatacgga 240
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gtcactactt tctcttatgg tgttcaatgc ttttcccgtt atccggatca tatgaaacgg 360
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aaagatgacg ggaactacaa gacgcgtgct gaagtcaagt ttgaaggtga tacccttgtt 480
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ctcgagtaca actataactc acacaatgta tacatcacgg cagacaaaca aaagaatgga 600
atcaaagcta acttcaaaat tcgccacaac attgaagatg gatccgttca actagcagac 660
cattatcaac aaaatactcc aattggcgat ggccctgtcc ttttaccaga caaccattac 720
ctgtcgacac aatctgccct ttcgaaagat cccaacgaaa agagagacca catggtcctt 780
cttgagtttg taacagctgc tgggattaca catggcatgg atgaactata caaacccggg 840
gggggttctc atcatcatca tcatcattaa taaactaatc cttaacattc tactcccaac 900
cccttggggc ctctaaacgg gtcttgaggg gttttttg 938

<210> 57
<211> 905
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
expression construct

<400> 57
gaaattaata cgactcacta tagggagacc acaacggttt ccctctagaa ataattttgt 60
ttaactttaa gaaggagata taccatgact agcaaaggag aagaactttt cactggagtt 120
gtcccaattc ttgttgaatt agatggtgat gttaatgggc acaaattttc tgtcagtgga 180
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
stem-loop sequence

<400> 58
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<220>
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stem-loop sequence

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stem-loop sequence

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<210> 67
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<210> 69
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<213> Artificial Sequence

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<213> Artificial Sequence

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